

In the Claims

Please amend the claims in the manner indicated.

1. (currently amended) An apparatus comprising:
- ~~a multi-level optical waveguide comprising~~
- a first substrate having a first opening therethrough;
- a second substrate, attached to said first substrate, having a second opening therethrough and aligned with the first opening in said first substrate;
- a first optically transparent material disposed in said first substrate hole; and
- a second optically transparent material disposed in said second substrate hole;
- wherein the first optically transparent material is optically aligned with the second optically transparent material to form a waveguide.
2. (previously amended) The apparatus of claim 1, wherein said transparent material is a gas.
3. (previously amended) The apparatus of claim 1, wherein said transparent material is cladding grown on the inside of the substrate hole.
4. (previously amended) The apparatus of claim 1, wherein said transparent material is comprised of an outer cladding and a separate inner transparent material.

5. (previously amended) The apparatus of claim 1, wherein said transparent material is an optical fiber.
6. (previously amended) The apparatus of claim 1, wherein said first substrate is made of silicon.
7. (previously amended) The apparatus of claim 1, wherein said transparent material and said first substrate are made of a same material.
8. (previously amended) The apparatus of claim 1 further comprising a source of electromagnetic radiation attached to said first substrate.
9. (currently amended) ~~The~~ An apparatus of claim 1 further comprising:
a multi-level optical waveguide comprising
a first substrate having a first opening therethrough;
a second substrate, attached to said first substrate, having a second opening
therethrough and aligned with the first opening in said first substrate;
a first optically transparent material disposed in said first substrate hole;
a second optically transparent material disposed in said second substrate hole;
and
a detector of electromagnetic radiation disposed at an end of said second
opening.

d 10. (previously amended) The apparatus of claim 1 further comprising a conductive layer on said second substrate.

11-30. (cancelled)